CLAIMS:

1. A vehicle tyre data monitoring system comprising a wheel mounted sensor means adapted to transmit one or more of pressure, temperature, angular velocity, and force vector data for a tyre as a digital serial datagram through a two-wire communication channel to a chassis mounted reader means, the communication channel being adapted to simultaneously supply power to the sensor means and receive the data for processing and subsequent display to a user of the system.

2. The vehicle tyre data monitoring system of claim 1 wherein the sensor means comprises a three or more terminal sensor subsystem having at least separate ground, power and data connections which is converted to a two terminal sensor subsystem for transmitting the data across the communication channel to the reader means, with a first terminal being for a ground connection and a second terminal being for a combined power and data connection.

3. The vehicle tyre data monitoring system of claim 2 wherein the two-wire communication channel superimposes the transmission of the data on the power connection as a serial datagram that is received by the receiving means.

4. The vehicle tyre data monitoring system of claim 3 wherein the datagram is decoded by the reader means to provide decoded information that is made available to a microprocessor system for analysis and display of the tyre data to a user of the system.

5. A two-wire communication channel for a vehicle tyre data monitoring system, the channel including continuous contacting means for communicating

between a sensor means mounted on a wheel of the vehicle and a reader means mounted on a chassis of the vehicle, and being adapted to transmit one or more of pressure, temperature, angular velocity and force vector data for a tyre as a digital serial datagram from the sensor means to the reader means and to supply power from the reader means to the sensor means, the supply of power being simultaneous with the transmission and reception of the data, wherein the communication channel includes a rotational coupling means having a first part mounted on a rotatable rim for the wheel and a second part mounted on a non-rotating component of a hub for the wheel, the first and second parts providing a contacting, two wire communication channel for the data monitoring system.

6. A continuous coupling in a two-wire communication channel for a vehicle tyre data monitoring system, the continuous coupling comprising a first part mounted on a rotatable rim of a wheel of the vehicle, and a second part mounted on a non-rotating component of a hub for the wheel, the first part and the second part being adapted to maintain continuous electrical contact therebetween during rotation of the wheel for the transmission of decodable data for the tyre from a sensor means mounted on the wheel to a reader means mounted on the chassis.

7. A vehicle wheel to hub electrical mating interconnection in a tyre data monitoring system for the transmission thereacross of one or more of pressure, temperature, angular velocity and force vector data for a tyre mounted on the wheel, the electrical mating interconnection comprising a first part mounted on a rotatable rim of the wheel and adapted to receive the data from a sensor means, and a second part mounted on a non-rotating component of a hub for

the wheel, the second part being adapted to mate with the first part when the wheel is mounted on the hub so as to allow the data to be transmitted from the first part to the second part, the second part being further adapted to transmit the data to a reader means mounted on a chassis of the vehicle for processing and subsequent display to a user of the system.

8. The vehicle wheel to hub electrical mating interconnection of claim 7 wherein the mating of the first part with the second part occurs automatically during the mounting of the wheel on the hub, and demating occurs automatically during dismounting of the wheel from the hub.

9. A two-wire communication channel for a vehicle tyre data monitoring system, the channel including electromagnetic transforming means for communicating between a sensor means mounted on a wheel of the vehicle and a reader means mounted on a chassis of the vehicle, and being adapted to transmit one or more of pressure, temperature, angular velocity and force vector data for a tyre as a digital serial datagram from the sensor means to the reader means and to supply power from the reader means to the sensor means, the supply of power being simultaneous with the transmission and reception of the data, wherein a first part of the electromagnetic transforming means is mounted annularly on a rim of the wheel and a second part of the electromagnetic transforming means is mounted on a non-rotating component of a hub for the wheel, the first and second parts being divided by an air gap and providing a non-contacting, two wire communication channel for the data monitoring system.

10. An electromagnetic coupling in a two-wire communication channel for a vehicle tyre data monitoring system, the electromagnetic coupling comprising a first part mounted annularly on a rim of a wheel of the vehicle, and a second part mounted on a non-rotating component of a hub for the wheel, the first part and the second part being adapted to maintain electromagnetic induction therebetween during rotation of the wheel for the transmission of decodable data for the tyre from a sensor means mounted on the wheel to a reader means mounted on the chassis.

11. The two-wire communication channel of claim 9 wherein the second part comprises a receiver coil mounted on a non-rotating component of a hub for the wheel, and the first part comprises a sensor coil so mounted annularly on the rim of the wheel as to maintain a constant and sufficiently proximate distance to the receiver coil during rotation of the wheel for electromagnetic induction to occur.

12. The two-wire communication channel of claim 11 wherein the sensor coil includes a power supply circuit and derives power to operate the sensing and transmission of the data from an electromagnetic flux generated by the receiver coil serving as a power connection, the electromagnetic flux causing the power supply circuit of the sensor coil to develop sufficient DC voltage to enable the sensor means to be energised and to transmit the data to the reader means, the data being adapted to modulate the electromagnetic flux so as to superimpose the transmission of the data on the power connection as a serial datagram, the so modulated signal being detected and decoded by the reader means to enable the data to be processed and displayed to a user of the system.

13. The electromagnetic coupling of claim 10 wherein the second part comprises a receiver coil mounted on a non-rotating component of a hub for the wheel, and the first part comprises a sensor coil so mounted annularly on the rim of the wheel as to maintain a constant and sufficiently proximate distance to the receiver coil during rotation of the wheel for electromagnetic induction to occur.

14. The electromagnetic coupling of claim 13 wherein the sensor coil includes a power supply circuit and derives power to operate the sensing and transmission of the data from an electromagnetic flux generated by the receiver coil serving as a power connection, the electromagnetic flux causing the power supply circuit of the sensor coil to develop sufficient DC voltage to enable the sensor means to be energised and to transmit the data to the reader means, the data being adapted to modulate the electromagnetic flux so as to superimpose the transmission of the data on the power connection as a serial datagram, the so modulated signal being detected and decoded by the reader means to enable the data to be processed and displayed to a user of the system.